

## CLAIMS

1           1.       A lateral flow immunoassay device for identifying the presence of tissue from  
2       a particular species of billfish in a test sample, the device comprising a substrate onto which a  
3       billfish specific antigen-containing sample has been immobilized.

1           2.       The immunoassay device of claim 1, wherein the substrate comprises a  
2       nitrocellulose membrane.

1           3.       The immunoassay device of claim 2, wherein the substrate comprises a  
2       plastic-backed nitrocellulose membrane.

1           4.       The immunoassay device of claim 1, wherein the substrate has a first end and  
2       a second end, the first end having thereon the immobilized billfish-specific antigen-  
3       containing sample, and the second end being adapted to receive a solution comprising an  
4       antibody that specifically binds the billfish-specific antigen.

1           5.       The immunoassay device of claim 4, wherein the solution further comprises at  
2       least a portion of the test sample.

1           6.       The immunoassay device of claim 1, wherein the billfish-specific antigen is a  
2       billfish serum albumin.

1           7.       The immunoassay device of claim 6, wherein the billfish serum albumin  
2       comprisess sailfish serum albumin.

1 8. The immunoassay device of claim 6, wherein the billfish serum albumin  
2 comprises blue marlin serum albumin.

1 9. The immunoassay device of claim 6, wherein the billfish serum albumin  
2 comprises white marlin serum albumin.

1 10. The immunoassay device of claim 4, wherein the solution is applied on the  
2 substrate.

1 11. The immunoassay device of claim 10, wherein at least a portion of the  
2 antibody is specifically bound to the immobilized billfish specific antigen.

1 12. The immunoassay device of claim 10, wherein the antibody is detectably  
2 labeled.

1 13. The immunoassay device of claim 12, wherein the detectably labeled antibody  
2 is conjugated to a gold particle.

1 14. The immunoassay device of claim 12, wherein the gold particle has a diameter  
2 of between 20-40 nm.

1 15. The immunoassay device of claim 1, wherein a non-billfish specific antigen  
2 has been immobilized on the substrate.

1 16. A kit for identifying the presence of tissue from a particular species of billfish  
2 in a test sample, the kit comprising:  
3 a lateral flow immunoassay device comprising a substrate onto which a  
4 billfish- specific antigen-containing sample has been immobilized; and  
5 a solution comprising an antibody that specifically binds the billfish-specific  
6 antigen.

1 17. The kit of claim 16, wherein the billfish specific antigen is a billfish serum  
2 albumin.

1 18. The kit of claim 17, wherein the billfish serum albumin is selected from the  
2 group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin  
3 serum albumin.

1 19. The kit of claim 16, wherein the antibody is detectably labeled.

1 20. The kit of claim 19, wherein the detectably labeled antibody is conjugated to a  
2 gold particle.

1 21. The kit of claim 20, wherein the gold particle has a diameter of between 20-40  
2 nm.

1 22. The kit of claim 16, wherein a non-billfish specific antigen has been  
2 immobilized on the substrate.

1           23. A method for identifying the presence of tissue from a particular species of  
2 billfish in a test sample, the method comprising the steps of:  
3           (A) providing the test sample and a substrate onto which a billfish-specific  
4 antigen-containing sample has been immobilized;  
5           (B) preparing an antibody-test sample mixture by mixing the test sample  
6 with an antibody that specifically binds the billfish specific antigen; and  
7           (C) applying the antibody-test sample mixture to the substrate.

1           24. The method of claim 23, wherein the billfish-specific antigen is a billfish  
serum albumin.

2           25. The method of claim 24, wherein the billfish serum albumin is selected from  
the group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin  
serum albumin.

3           26. The method of claim 23, wherein the antibody is detectably labeled.

1           27. The method of claim 26, wherein the detectably labeled antibody is  
2 conjugated to a gold particle.

1           28. The method of claim 23, wherein a non-billfish specific antigen has been  
2 immobilized on the substrate.

1 29. A method for identifying the presence of tissue from a particular species of  
2 billfish in a test sample, the method comprising the steps of:  
3 (A) providing the test sample and a substrate;  
4 (B) immobilizing at least a portion of the test sample on the substrate;  
5 (C) providing an antibody that specifically binds a billfish-specific antigen;  
6 and  
7 (D) applying the antibody to the substrate.

1 30. The method of claim 29, wherein the billfish-specific antigen is a billfish  
2 serum albumin.

1 31. The method of claim 30, wherein the billfish serum albumin is selected from  
2 the group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin  
3 serum albumin.

1 32. The method of claim 29, wherein the antibody is detectably labeled.

1 33. The method of claim 32, wherein the detectably labeled antibody is  
2 conjugated to a gold particle.

1 34. The method of claim 29, wherein a non-billfish specific antigen has been  
2 immobilized on the substrate.